

**FY 2013 Region 1 Refuge I&M Proposal Template**

→Please limit description of each proposal to 5 pages

Submitted by: **Erin Holmes, Refuge Manager**

Contact information: **Tualatin River NWR, 503-625-5944**

Project title: **Wapato Lake Hydrological Management Study**

Primary individual responsible for completing the project (name, title, contact information): **Erin Holmes, Refuge Manager, 503-625-5944 x221**

Project abstract: *Provide a brief overview for the project, where specifics will be captured in the Evaluation Criteria table below.* **The Wapato Lake Hydrological Management study is a project whereas the USFWS (refuges, water resources, and I&M) have been working with U.S. Geological Survey to conduct a hydrologic and water quality study of the Wapato lake subbasin. This priorities of this project are to collect various water quality and water flow/stage information that will be used to develop a restoration plan for this unit of Tualatin River NWR. This study has been identified in the CCP as a top priority and without this data, we will not be able to move forward with restoration.**

Funding Priorities (check all funding priorities that apply to the project):

<input checked="" type="checkbox"/>	Inventory Project/Collection of Baseline Data	<input type="checkbox"/>	Adaptive Management
<input checked="" type="checkbox"/>	Data Compilation and Management	<input type="checkbox"/>	Protocol Development
<input type="checkbox"/>	Purchase of Equipment	<input type="checkbox"/>	Evaluate effects of environmental stressors, incl. climate change
<input type="checkbox"/>	Leveraging existing programs supporting surveys on refuges.		

Project objective(s): **The Wapato Lake unit of Tualatin River NWR is a very convoluted and complex area as it has been highly manipulated and altered ever since the lake itself was drained in the late 1890’s for onion farming. Since that time, there have been over 5 miles of levees and dikes constructed, multiple drain tiles, ditches, and outlets that have altered the system in such a state that it is extremely difficult to being to plan restoration. Additionally, any restoration efforts that take place will directly affect the water quality and this has serious implications as the refuge is directly upstream from a water treatment plant. The objective of this project is to ultimately create a digital elevation model that will be used to develop a water balance model that will ultimately guide restoration for the subbasin. For the past year, USGS has been operating and collecting data from a streamflow, stage, and water quality sensor network. There are 3 stations in the**

**subbasin recording this information. The USFWS was able to capture LiDAR data of the lakebed which will be used in conjunction with the USGS data to analyze and formulate a restoration plan.**

**Methods: The equipment, operations, and collection of this initial data is all being performed by USGS – Oregon Water Science Center. This funding request is to support the contract for this project. USGS is monitoring the sensors and this information is available online and updated daily.**

**Project implementation timeline, including schedules for field/lab/office work, data management (entry, QA/QC, analyses, archiving), and deliverables (e.g., progress/final reports, potential peer-reviewed publications): The project began in FY12 with the installation of the sensors in the lakebed and subbasin. The goal is to collect at least two years of data which will be until the end of FY13. The data collected (streamflow, stage, and water quality) will be used to generate a restoration plan.**

**Project completion date (and mid-completion date, if project extends into FY2014): The data collection is expected to be completed by the end of FY13.**

Briefly describe how the project will address each of the following Evaluation Criteria:

- 1. Planning Connection – The data collected in this project will be used to help develop a restoration plan for the Wapato Lake unit that will help to restore native habitat and ensure water quality standards are at acceptable levels during this process. This project has been identified in the CCP and will be discussed in a future HMP. Once this data is collected, the Refuge will undergo an Environmental Assessment to meet NEPA compliance for the restoration plan. This area is highly political with many interested partners and landowners. This data will serve to help all parties involved. Additionally, this area has been identified as a high priority area by several partners; such as Metro, Clean Water Services, ODFW, and The Wetlands Conservancy.**
- 2. Large Investment in Management Actions – This unit was established in 2007 with the goal of ultimately becoming a separate National Wildlife Refuge. Since 2007, there has been a lot of investment by the Service and other partners to acquire the lakebed for restoration. To date we have acquired approximately 800 acres and have invested tremendous funds in acquisition dollars and funding for USGS to begin the study.**
- 3. Partners – This project and area has many partners, including the service. To date, I have worked directly with the Water Resources, Inventorying and Monitoring, and Realty programs in the RO. I have also worked with Partners for Fish and Wildlife who have expanded their area to include the Wapato Lake subbasin. I have engaged in discussions with Fisheries who are very interested in the potential to re-establish native fisheries from the Coastal mountains to the Tualatin river. Non-Service partners include discussions to support adjacent landowners with the Tualatin Soil and Water Conservation District and NRCS; partnership with Metro to create a wildlife**

corridor between our properties; partnership with Clean Water Services and Joint Water Commission to ensure water quality standards are being achieved, The Wetland Conservancy and ODFW in further acquisition of property in the lakebed, and many others as we strive to ensure that there is continuity in restoration and we are achieving a common goal and vision.

4. **Controversy** – Since the establishment of this property in 2007, the Service has committed to the partners and the private landowners both inside the unit and outside, that prior to any restoration effort taking place, that the Service would collect the best science possible to help guide restoration planning. This is extremely important as any action that takes place, regardless of the restoration direction, will directly impact water quality, adjacent farming, and other efforts. It is critical that the best science is used for this effort. This area is very controversial and several trips by partners have been made to Washington D.C. to raise awareness of this area.
5. **National I&M Priority** – This project is directly compiling legacy data to support our CCP objectives and move forward with restoration planning. We have obtained LiDar data that will help us with this project and are in the process of performing baseline surveys. This project will have a direct and planned benefit to water quality as there is a treatment plant downstream. After years of farming, water leaving the lakebed is of very low quality and as such, we are under restrictions by the Oregon DEQ.
6. **Project Design** – This project started in FY12 and is of very high quality and well designed by USGS.
7. **Data Management** (Complete the next section)
8. **Continuity**- This project is the beginning of data collection on a new unit of the Refuge. It started in FY12 and the project should be completed at the end of FY13. However, over the course of restoration, this data can continue to be collected at intervals to track restoration progress on many levels. Monitoring will be required for at least 15 years.
9. **Other Evaluation Criteria**

Briefly describe how the project will address each of the following elements of a Data management plan (See Appendix 1 in the RFP for definitions and examples):

*Data management pertains to the lifecycle of the project. The plan should address how data are managed during the project as well as the intended storage and distribution of final products.*

- **Description** – USGS installed and has been operating two stage/streamflow gages, a stage gage, several miscellaneous stage sensors, and a water-quality monitor. This data is available online to anyone and is used by partners for the Tualatin River confluence area.
- **Data Management Budget** – The total budget for FY13 is \$95,220. However, I&M contributed \$11,160, and the refuge contributed about \$35,000. An additional \$40,000 is required to support the remainder of the project.
- **Format** – The data has been collected solely by USGS and is provided online. Data collected includes, gage height, velocity, discharge, water temperature, specific conductance, dissolved oxygen, turbidity, total chlorophyll, and blue-

green algae. This information can be found online at [http://or.water.usgs.gov/cgi-bin/grapher/graph\\_setup.pl?site\\_id=14202650](http://or.water.usgs.gov/cgi-bin/grapher/graph_setup.pl?site_id=14202650) or [http://waterdata.usgs.gov/nwis/uv?site\\_no=14202650](http://waterdata.usgs.gov/nwis/uv?site_no=14202650) (or numbers 14202550 or 14202630)

- **Data Processing and Workflows**- All data is being collected, stored, and manipulated by USGS Oregon Water Science Department.
- **Quality Checks** – See above. As the ‘science arm’ of the Service, I am very confident in USGS’s ability to manage the data collected through this project. It is their intention to use this data not just for our benefit, but to also use it in other projects in the subbasin and even on a national level in partnership with other hydrologists and studies.
- **Back-up and Storage** - All data is being collected, stored, and manipulated by USGS Oregon Water Science Department.
- **Metadata**- I am unsure of this process. Once the data is collected, either USGS or the Service will do some modeling to help with the restoration planning. Currently, we have LiDAR.
- **Restrictions** - NONE
- **Contact** – Our contact at USGS is Stewart Rounds, [sarounds@usgs.gov](mailto:sarounds@usgs.gov), 503-251-3280. The Service contact would be either myself, Tim Mayer, Hydrologist, 503-231-2395, or Erin Stockenberg, I&M Biologist, 360-604-2586.

Requested funding up to \$40,000 (provide dollar amount in the budget table for each FY if this is a multi-year project):

Item	FY13	FY14
Contracts	40,000	
Materials/Equipment		
FWS Personnel Costs		
Other (specify):		
FY TOTAL(S)	40,000	